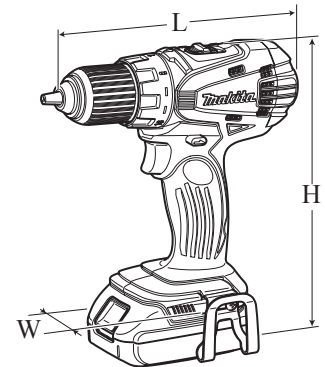




# TECHNICAL INFORMATION

- Model No.** ▶ BDF456
- Description** ▶ Cordless Driver Drill



(with Battery BL1815)

## CONCEPT AND MAIN APPLICATIONS

Model BDF456 is the upgraded version of model BDF452, featuring:

- More compact and lightweight design than BDF452
- More comfortable operation will be provided by re-designed ergonomic grip
- Compatible with the 18V Li-ion batteries equipped with the Battery protection circuit designed to protect the battery from damages due to overdischarge, high temperature or overload current

This product is available in the following variations.

Model No.	Battery		Battery cover	Charger	Plastic carrying case	Housing color
	Type	Quantity				
BDF456RHE	BL1815	2	1	DC18RA	Yes	Makita blue
BDF456RHEW						white
BDF456RFE	BL1830	2	1	DC18RA	Yes	Makita blue
BDF456RFEW						white
BDF456Z	No	No	No	No	No	Makita blue
BDF456ZW						white
BDF456SHE	BL1815	2	1	DC18SD	Yes	Makita blue
BDF456SHEW						white

Dimensions: mm (")	
Length (L)	192 (7-9/16)
Width (W)	79 (3-1/8)
Height (H)	234 (9-1/4)*2
	251 (9-7/8)*3

\*2: with Battery BL1815

\*3: with Battery BL1830

All models also include the accessories listed below in "Standard equipment".

### ► Specification

Battery	Voltage: V	18
	Capacity: Ah	1.3 / 3.0
	Cell	Li-ion
	Charging time (approx.): min.	15 / 22 with DC18RA
Max output: W		300
No load speed: min-1=rpm	High	0 - 1,500
	Low	0 - 400
Capacity of drill chuck: mm (")		1.5 (1/16) - 13 (1/2)
Capacity: mm (")	Steel	13 (1/2)
	Wood	38 (1-1/2)
Torque setting		16 stage + drill mode
Clutch torque setting: N.m (in.lbs)		1.0 - 5.0 (9 - 44)
Lock torque: N.m (in.lbs)		54 (480)
Max. fastening torque: N.m (in.lbs)	Soft joint	36 (320)
	Hard joint	50 (440)
Electric brake		Yes
Mechanical speed control		Yes (2 speed)
Variable speed control		Yes
Reversing switch		Yes
LED job light		Yes
Weight according to EPTA-Procedure 01/2003*4: kg (lbs)		1.5 (3.3)*2 / 1.7 (3.8)*3

\*2 with Battery BL1815, \*3 with Battery BL1830

\*4 with the lightest battery available for the model

### ► Standard equipment

- + - bit 2-45 ..... 1 pc
- Belt clip ..... 1 pc

**Note:** The standard equipment for the tool shown above may differ by country.

### ► Optional accessories

- Fast charger DC18RA
- Charger DC18SD
- Charger DC24SC
- Automotive Charger DC18SE
- Battery BL1815
- Battery BL1830
- Drill bits for wood
- Drill bits for steel
- Belt clip
- Bit holder

► **Repair**

**CAUTION:** Repair the machine in accordance with “Instruction manual” or “Safety instructions”.

**[1] NECESSARY REPAIRING TOOLS**

Code No.	Description	Use for
	Hex wrench 10	Removing / Assembling drill chuck
1R359	Drill chuck removing tool	Removing Drill chuck (Use this tool if Drill chuck cannot be removed by the method described in “ [3]-1. Drill chuck disassembling”.)

**[2] LUBRICATIONS**

Lubrications are not required as Gear section is replaced as a factory-lubricated gear unit.

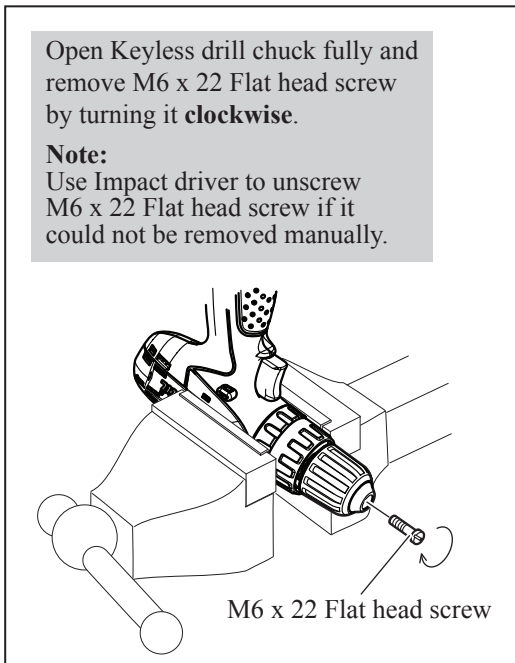
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-1. Drill chuck**

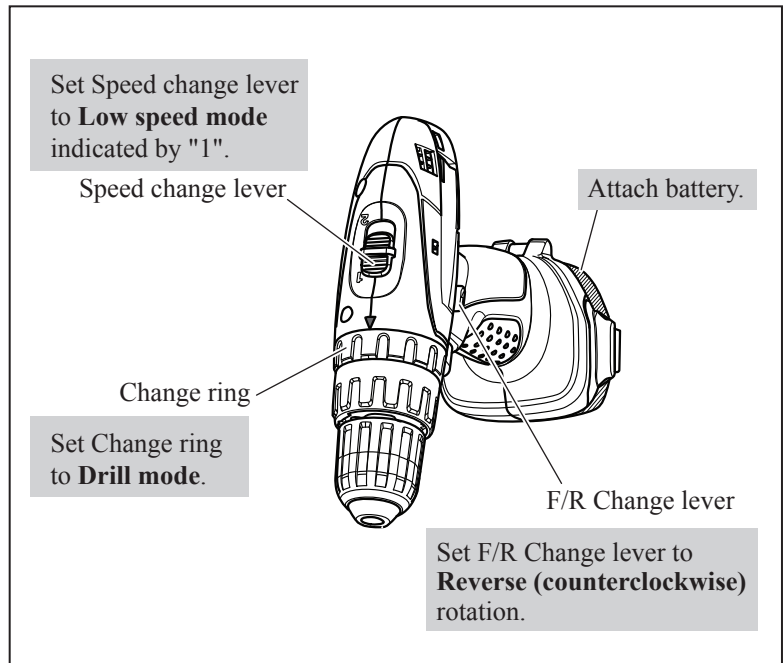
**DISASSEMBLING**

(1) Set Machine and Repairing tools. (Figs. 1, 2, 3)

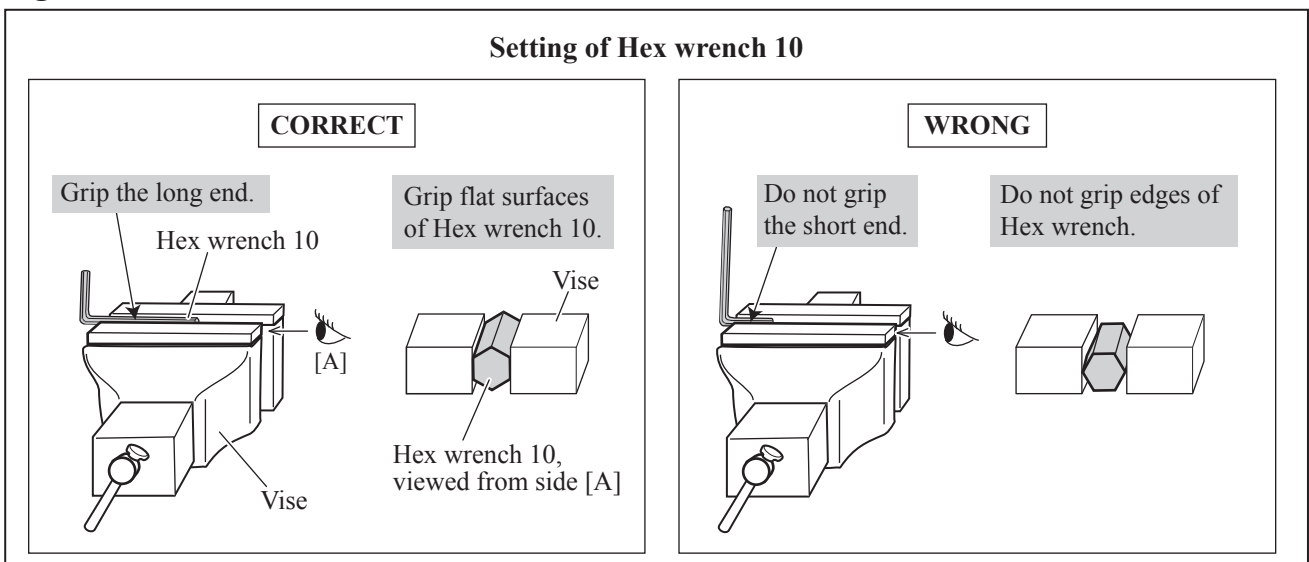
**Fig. 1**



**Fig. 2**



**Fig. 3**



► **Repair**

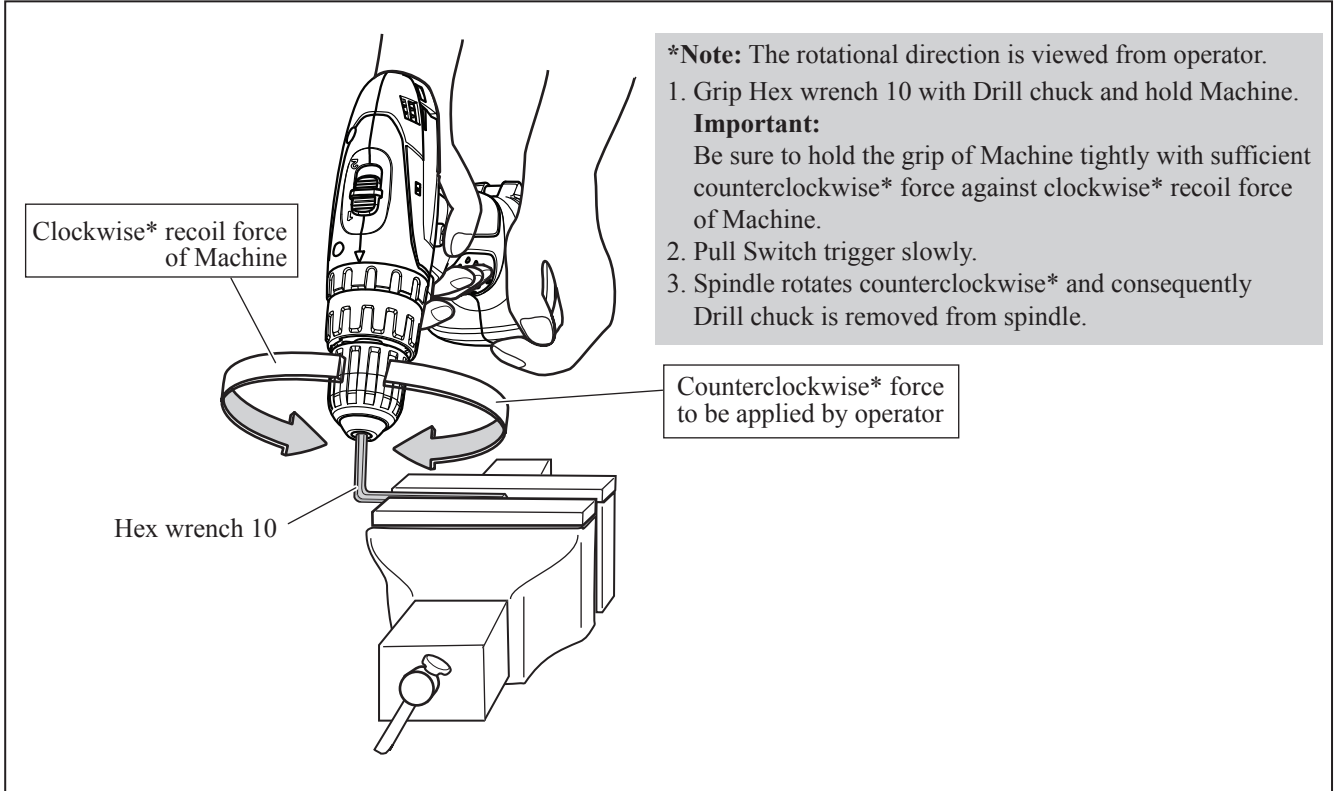
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-1. Drill chuck (cont.)**

DISASSEMBLING

(2) Remove Drill chuck. (Fig. 4)

**Fig. 4**

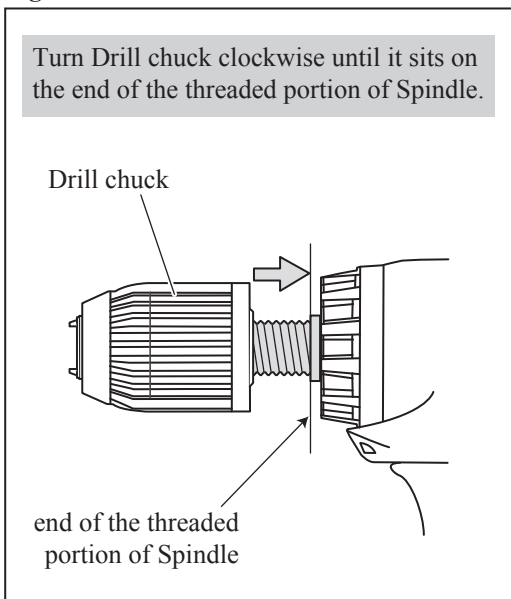


ASSEMBLING

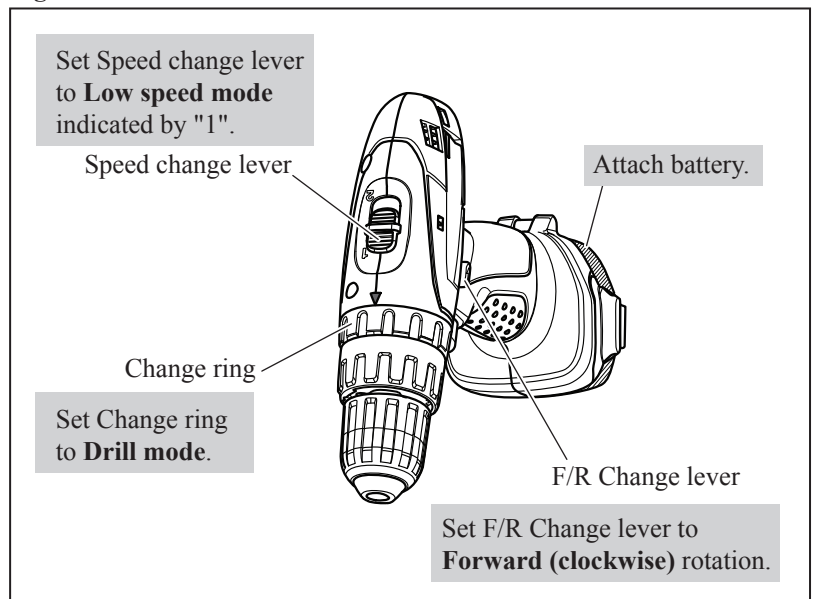
(1) Set the machine. (Figs. 5, 6)

(2) Set Hex wrench 10 to vise as described in Fig. 3.

**Fig. 5**



**Fig. 6**



► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

**[3]-1. Drill chuck (cont.)**

ASSEMBLING

(3) Tighten Drill chuck. (Fig. 7)

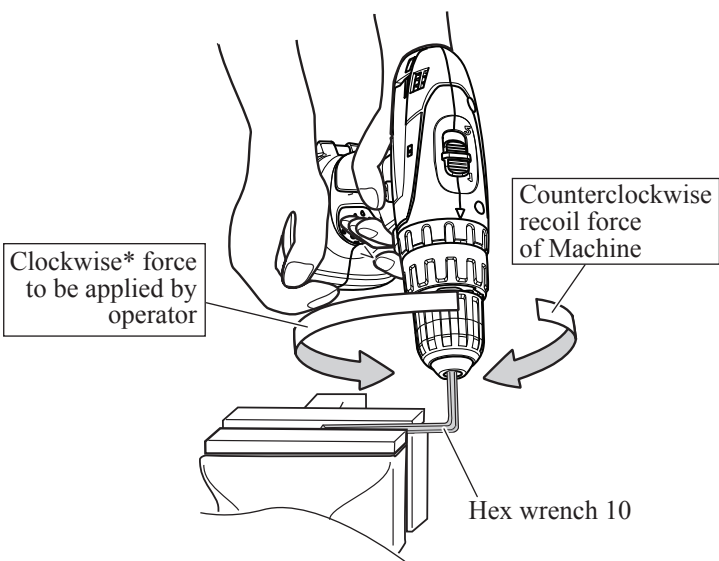
**Fig. 7**

**\*Note:** The rotational direction is viewed from operator

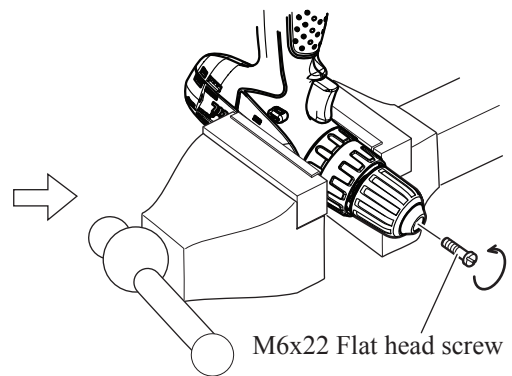
1. Grip Hex wrench 10 with Drill chuck and hold Machine.

**Important:**  
Be sure to hold the grip of Machine tightly with sufficient clockwise\* force against counterclockwise\* recoil force of Machine.

2. Pull Switch trigger slowly to turn Spindle clockwise\*.
3. Drill chuck is tightened and consequently Spindle is locked.



4. Open Keyless drill chuck fully, then drive M6x22 Flat head screw by turning **counterclockwise\*** with Impact driver.



**Note:**  
Apply adhesive (**ThreeBond 1321B/1342** or **Loctite 242** to threaded portion) when re-using removed M6x22 Flat head screw.

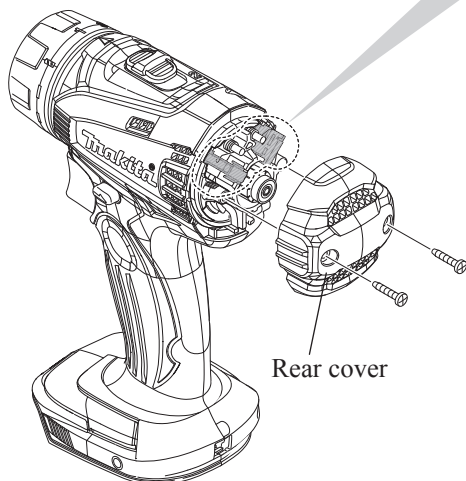
**[3]-2. Gear assembly and Motor section**

DISASSEMBLING

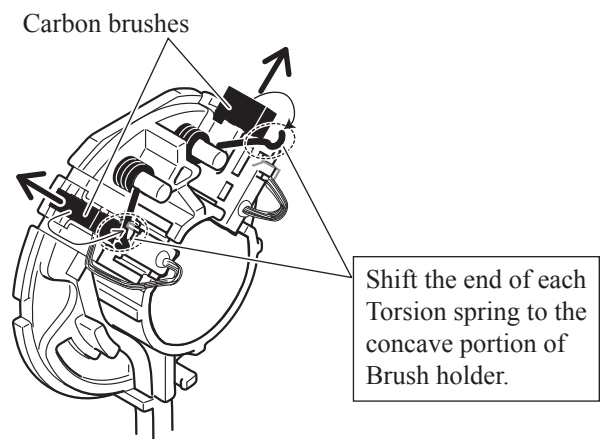
- (1) First, remove Drill chuck. (Figs. 1, 2, 3, 4)
- (2) Then remove Rear cover and disconnect Carbon brushes from Armature's Commutator before dismantling Housing set. (Fig. 8)

**Fig. 8**

1. Unscrew two 3x16 Tapping screws, then remove Rear cover.



2. Pull Carbon brushes in the direction of the arrow after shifting the end of each Torsion spring from the top of Carbon brushes.



► **Repair**

**[3] DISASSEMBLY/ASSEMBLY**

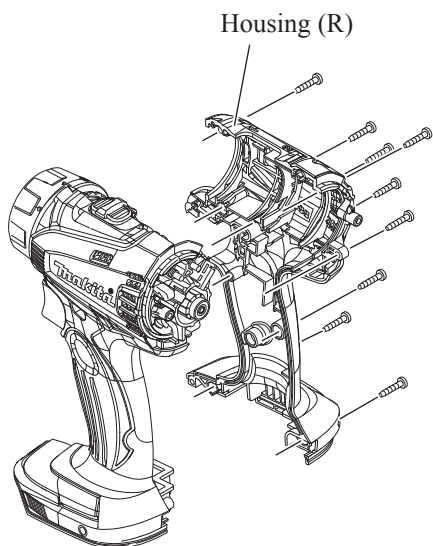
**[3]-2. Gear assembly and Motor section**

DISASSEMBLING

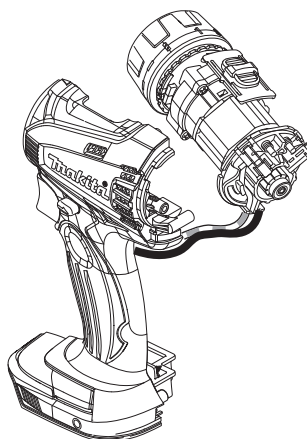
(3) Disassemble Gear assembly and Motor section. (Fig. 9)

**Fig. 9**

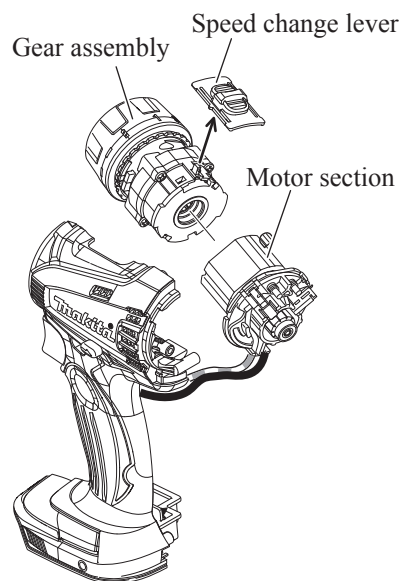
3. Unscrew nine 3x16 Tapping screws, then remove Housing (R).



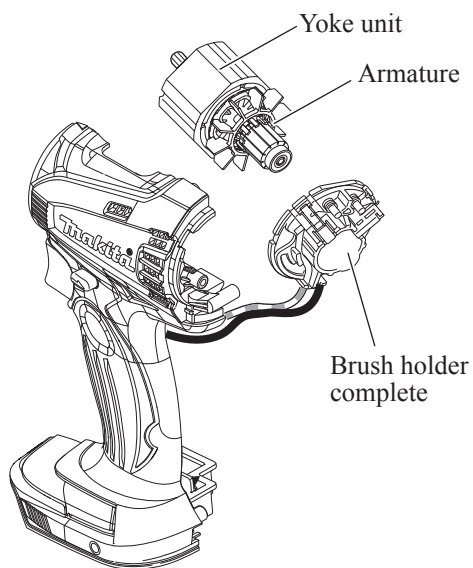
4. Remove the assembly of Motor section and Gear section.



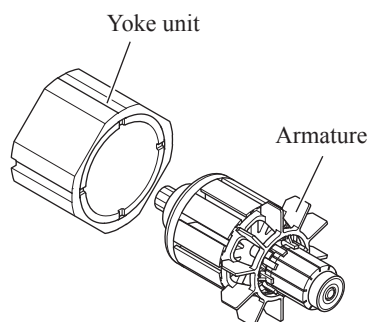
5. Remove Speed change lever, then separate Gear assembly from Motor section.



6. Remove Armature along with Yoke unit from Brush holder complete.



7. Pull Armature from Yoke unit.



► **Repair**

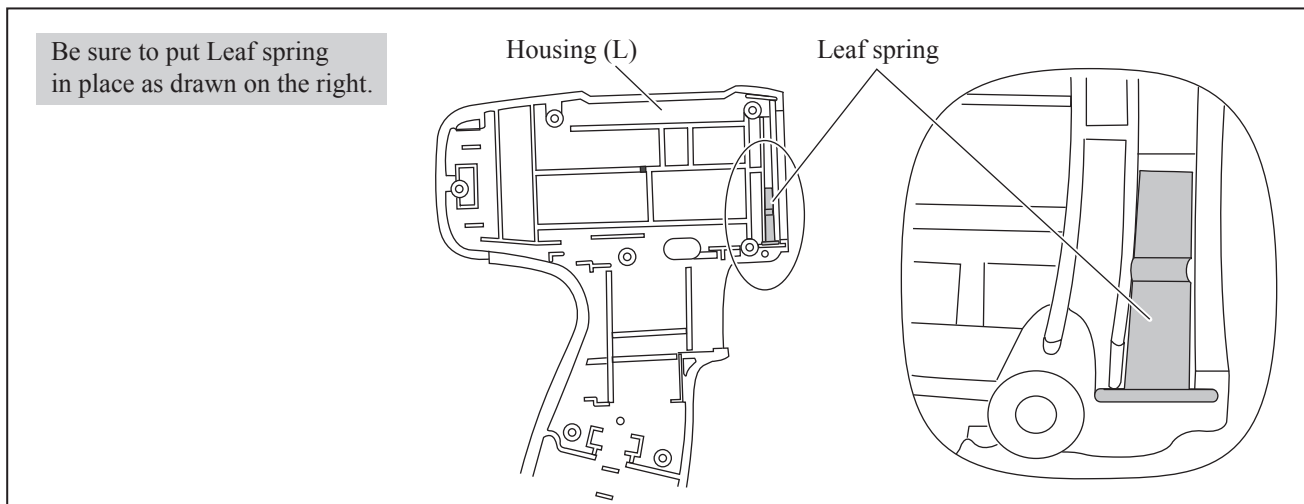
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-2. Gear assembly and Motor section (cont.)**

ASSEMBLING

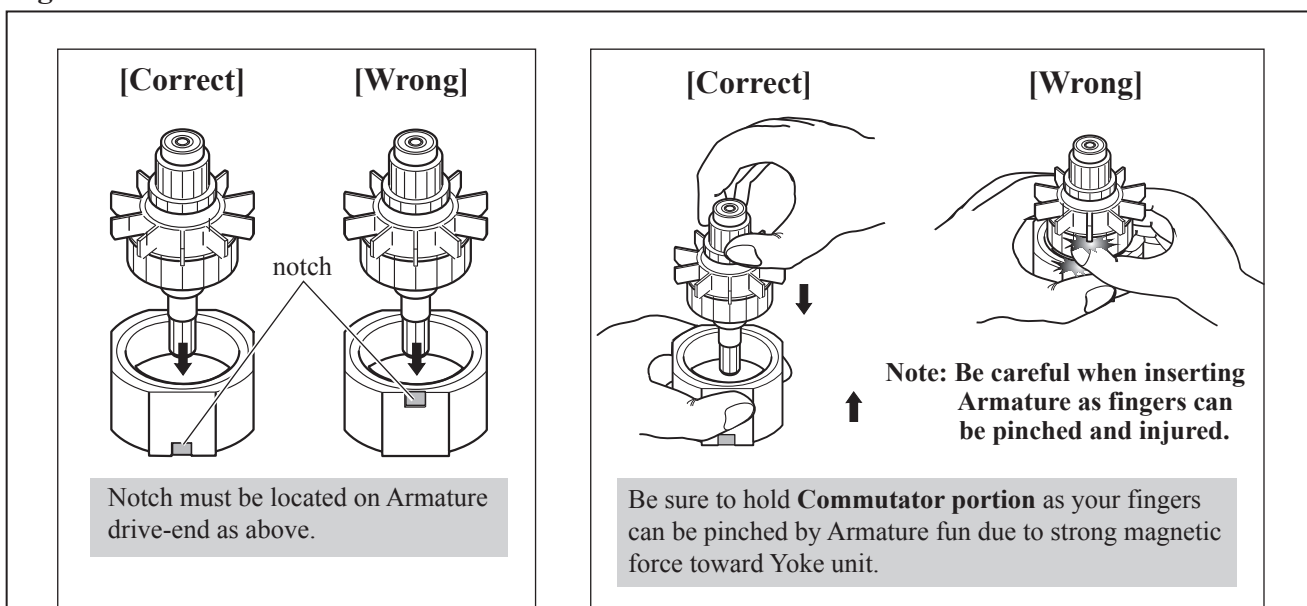
(3) Put Leaf spring in place on the inside of Housing (L). (Fig. 10)

**Fig. 10**



(4) Insert Armature into Yoke unit carefully and connect Motor section to Gear assembly. (Fig. 11)

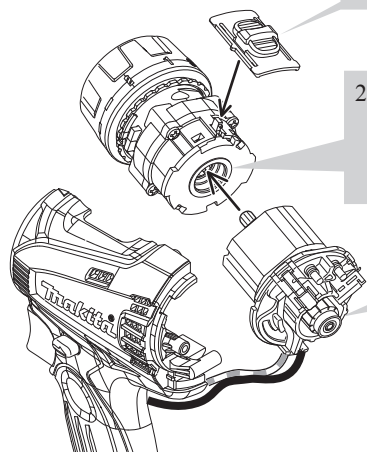
**Fig. 11**



3. Mount Speed change lever to Gear assembly. (Refer to Fig. 14)

2. Connect Motor section to Gear assembly by engaging Armature gear with Planetary gears in Gear assembly.

1. Insert Commutator end into Brush holder complete.



## ► Repair

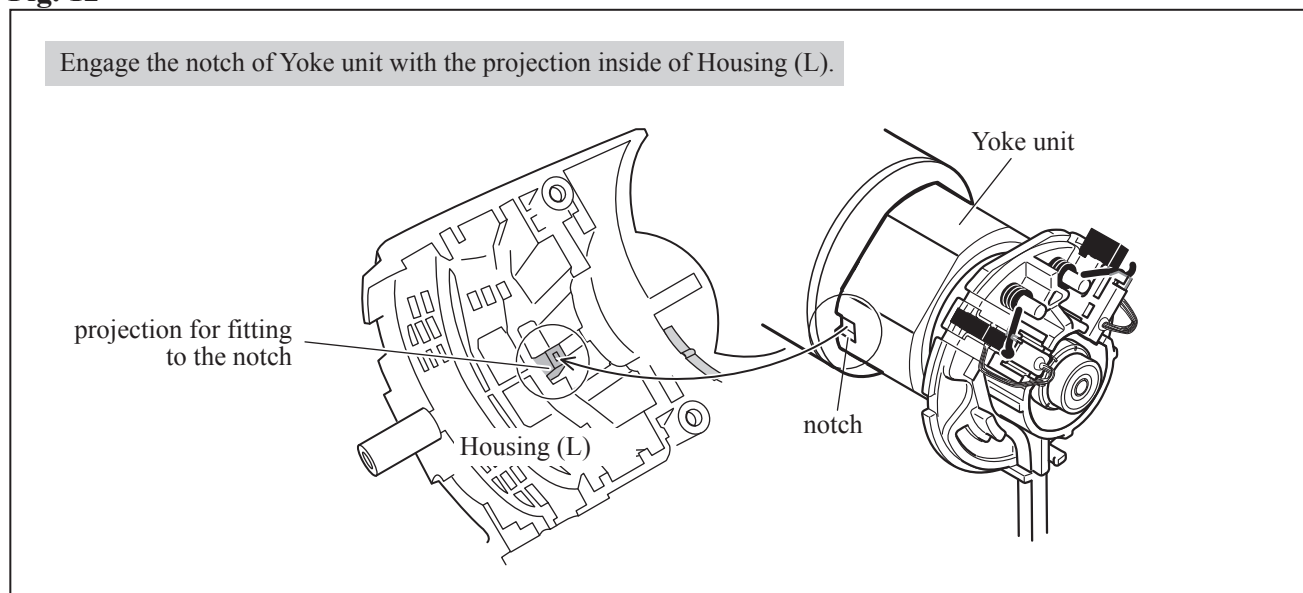
### [3] DISASSEMBLY/ASSEMBLY

#### [3]-2. Gear assembly and Motor section (cont.)

##### ASSEMBLING

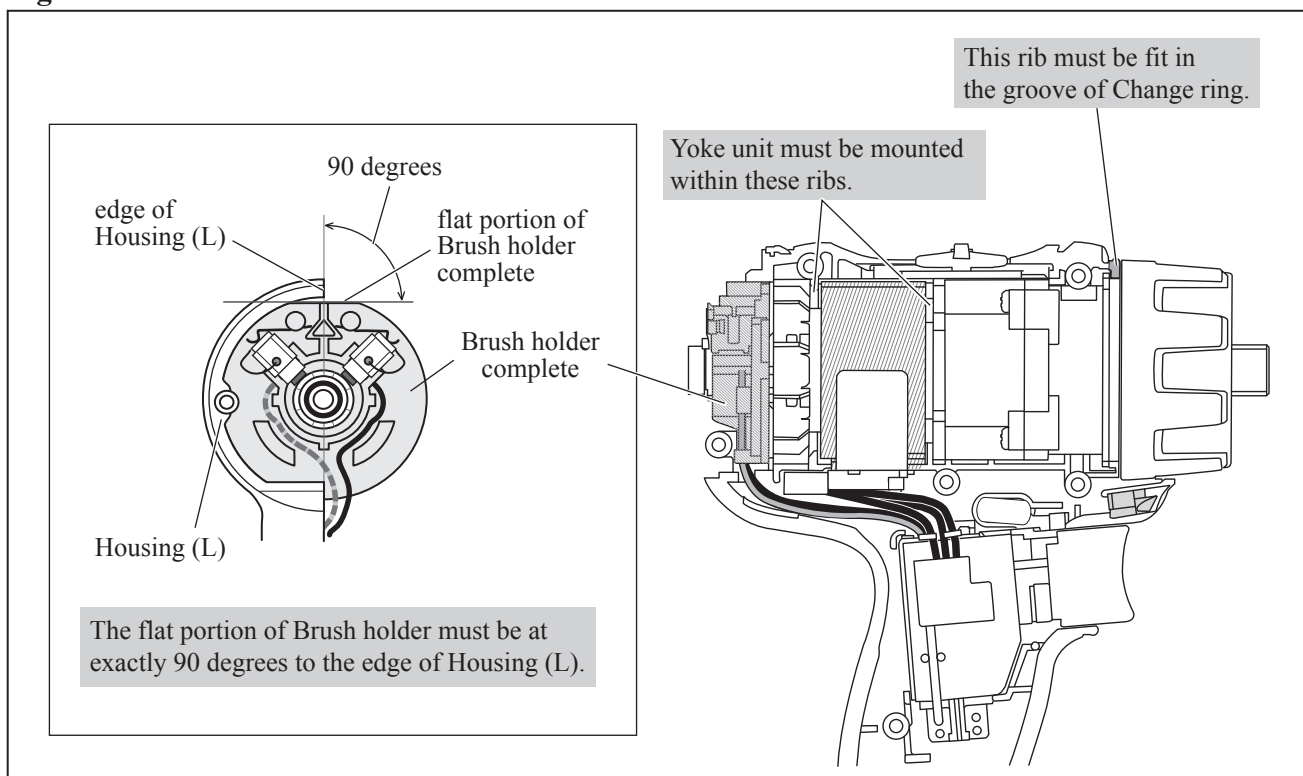
- (5) Engage the notch of Yoke unit with the projection inside of Housing (L) when mounting the assembly of Gear section and Motor section to Housing (L). (Fig. 12)

**Fig. 12**



- (6) Adjust the assembly of Motor section and the Gear section to the correct position in Housing (L) so as to assemble Housing (R) to Housing (L) smoothly and exactly. (Fig. 13)

**Fig. 13**

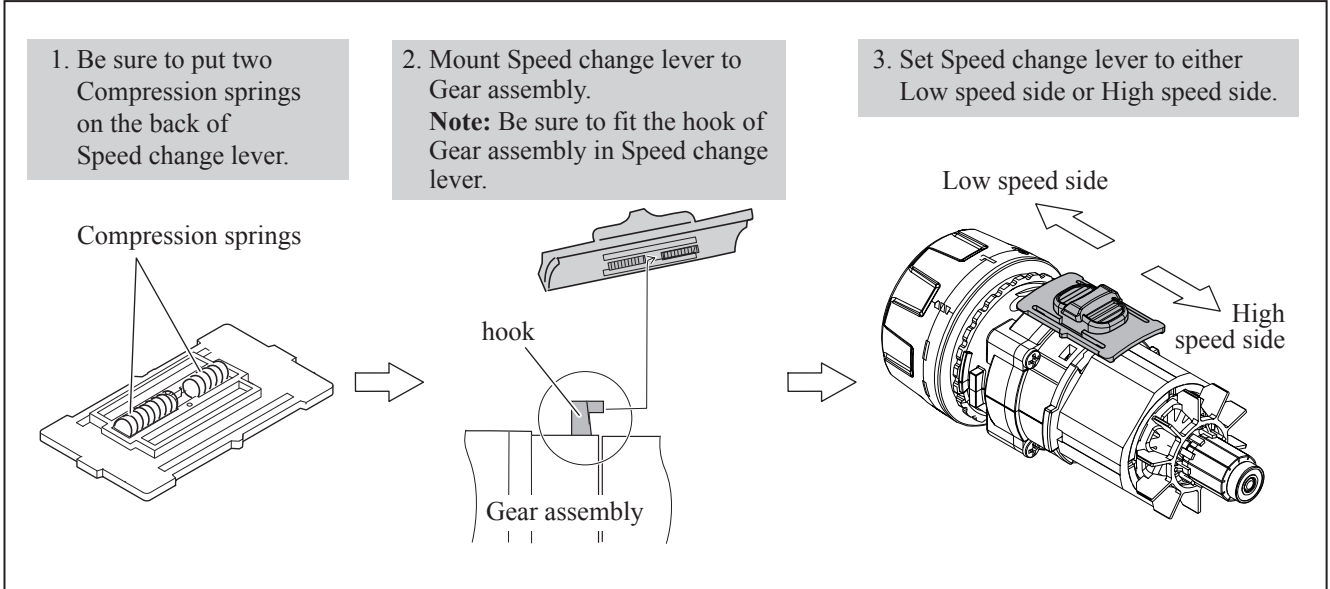


► **Repair**  
**[3] DISASSEMBLY/ASSEMBLY**  
**[3]-3. Speed change lever**

ASSEMBLING

Assemble Speed change lever to Gear assembly. (Fig. 14)

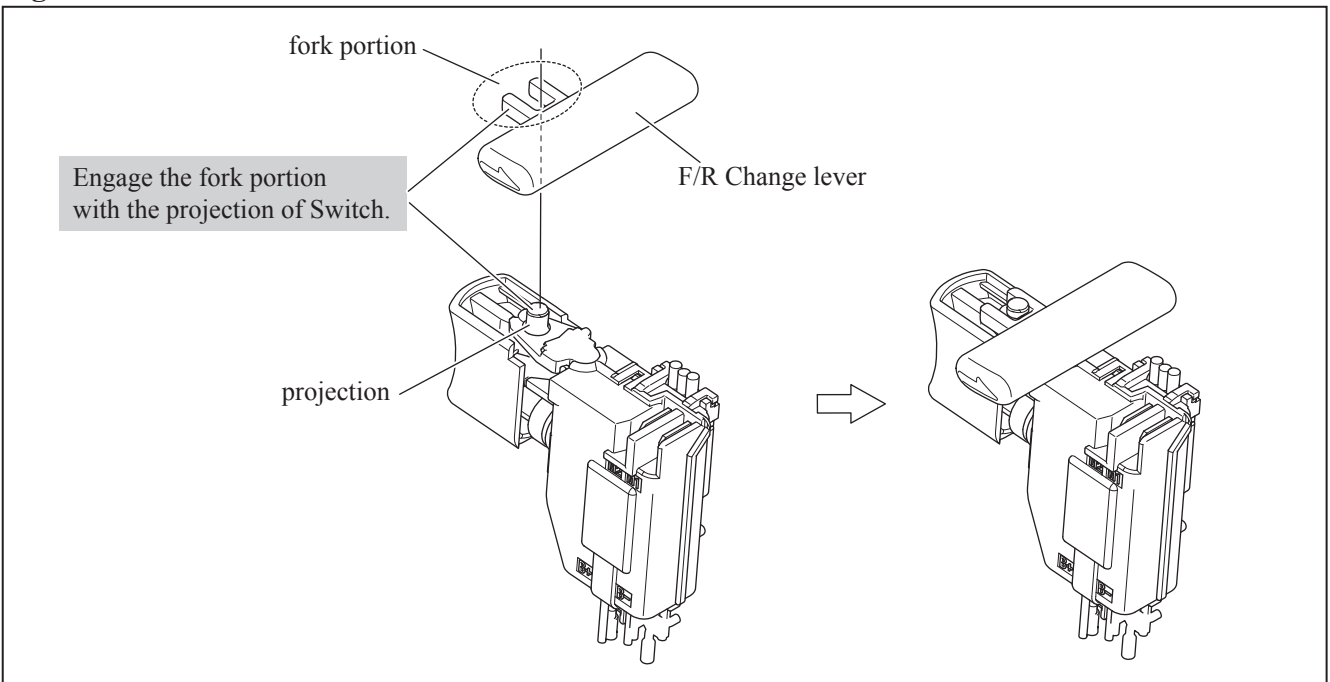
**Fig. 14**



**[3]-4. F/R Change lever**

Mount F/R Change lever on Switch before assembling Housing (R) to Housing (L). (Fig. 15)

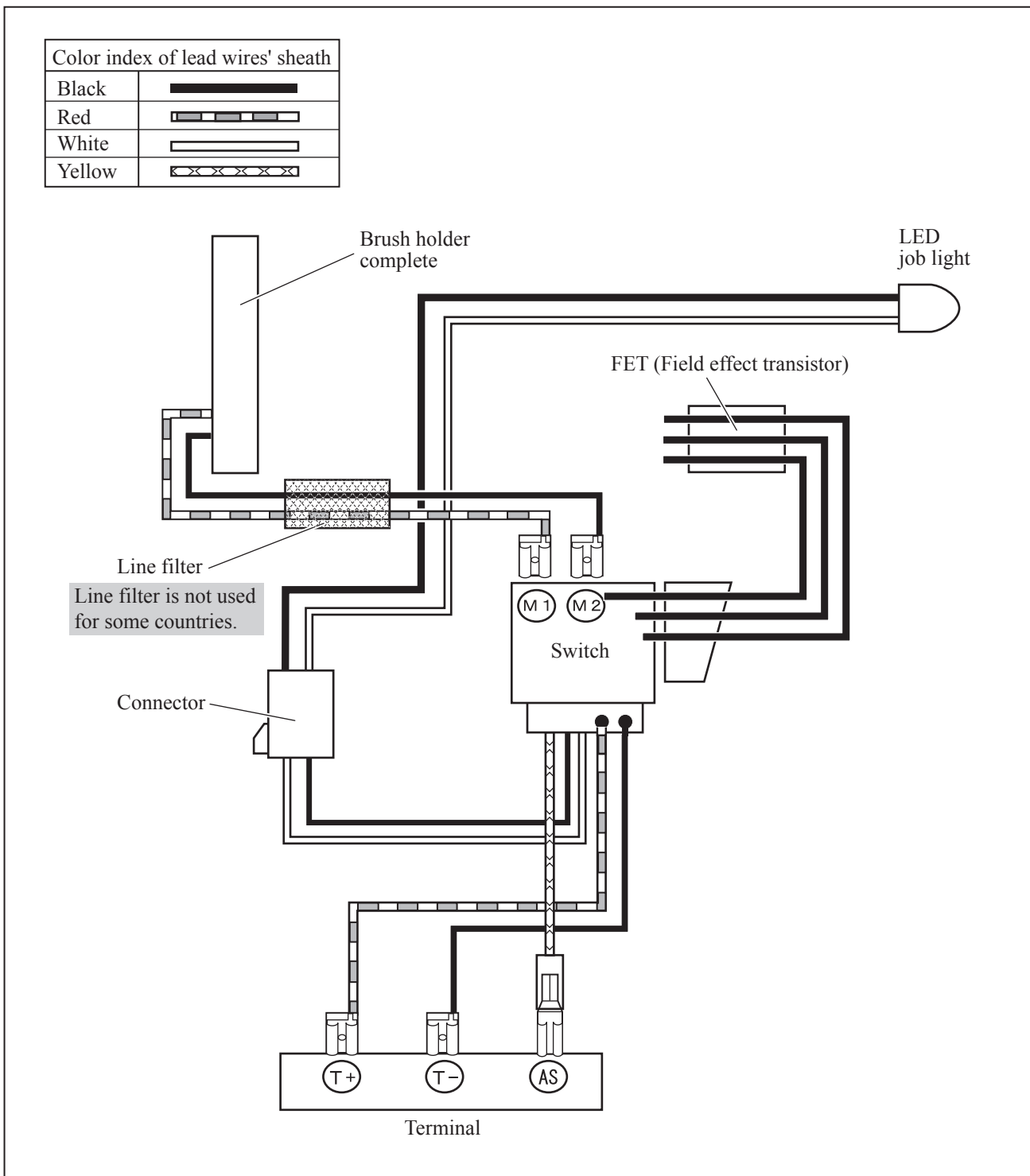
**Fig. 15**





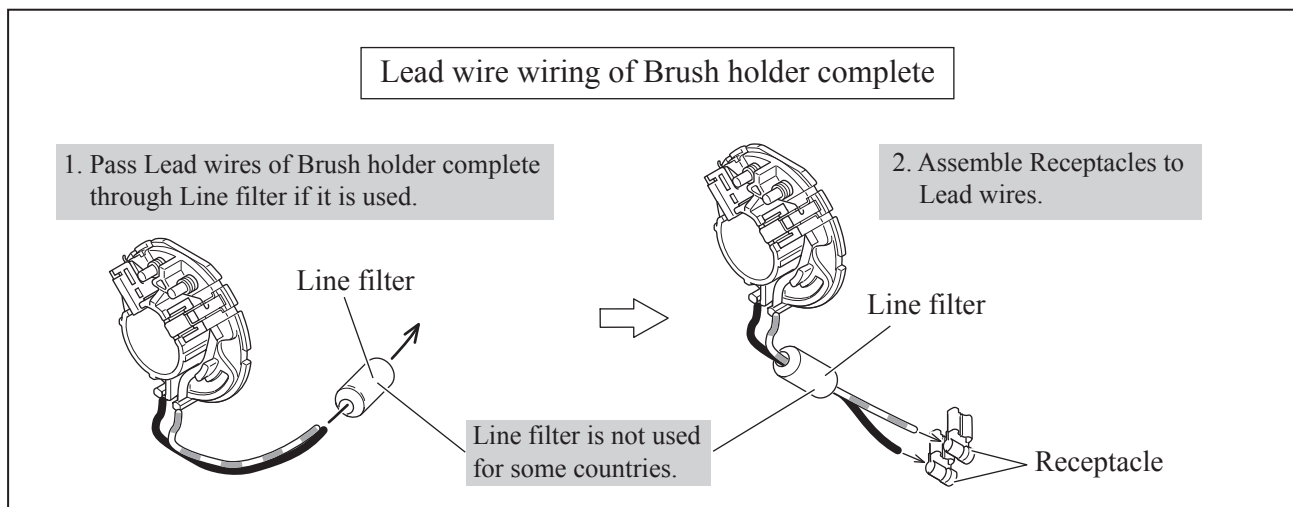
► **Circuit diagram**

**Fig. D-1**



► **Wiring diagram**

**Fig. D-2**



**Fig. D-3**

